CLAIMS

1. Non-homogeneous adsorbent constituted by at least one crystal formed from a core and at least one continuous outer layer characterized in that the core of said adsorbent has a volume adsorptive capacity representing at least 35% of the volume of the adsorbent and the outer layer has a diffusional selectivity greater than 5.

2. Non-homogeneous adsorbent according to claim 1 characterized in that the volume adsorptive capacity of the core represents at least 40% of the volume of the adsorbent.

3. Non-homogeneous adsorbent according to claim 1 or 2 characterized in that the diffusional selectivity is greater than 10.

4. Non-homogeneous adsorbent according to one of claims 1 to 3 characterized in that the adsorptive capacity of the core is greater than that of the continuous outer layer.

5. Non-homogeneous adsorbent according to one of claims 1 to 4 characterized in that the core is partially or totally empty.

6. Non-homogeneous adsorbent according to one of claims 1 to 4 characterized in that the core contains a crystallized micro- or mesoporous solid.

7. Non-homogeneous adsorbent according to one of claims 1 to 6 characterized in that the continuous outer layer contains a crystallized microporous solid.

8. Non-homogeneous adsorbent according to claim 6 characterized in that the core has a crystal size between 0.1 μm and 0.4 mm.

9. Non-homogeneous adsorbent according to claim 8 characterized in that the core has a crystal size between 0.2 μm and 50 μm.

10. Non-homogeneous adsorbent according to one of claims 1 to 9 characterized in that the continuous outer layer has a thickness between 0.01 and 100 μm.

11. Non-homogeneous adsorbent according to claim 10 characterized in that the continuous outer layer has a thickness between 0.1 and 10 μm.

12. Non-homogeneous adsorbent according to one of claims 1 to 11 characterized in that the core and said continuous outer layer are zeolitic solids.

13. Non-homogeneous adsorbent according to one of claims 1 to 12 characterized in that it is in spherical or cylindrical form.

14. Non-homogeneous adsorbent according to claim 13 characterized in that the radius of the core represents at least 40% of the total radius of the adsorbent.

15. Use of an adsorbent according to one of claims 1 to 14 in a gas- or vapour-separation process.

16. Use of an adsorbent according to one of claims 1 to 14 in a liquid-separation process.